

## INTRODUCTION TO ELECTRONIC RECORDS

This guideline, created by [Records Analysis Services](#), is applicable to all Commonwealth of Virginia agencies and local government entities. It discusses essential characteristics of electronic records, principles of electronic records management, and long-term preservation strategies. While the recommendations set forth in this document reflect current best practices in the field of electronic records, this set of guidelines is not meant to define mandatory standards or to act as an information technology guide. Agency and locality personnel should work with in-house IT departments to address questions related to computer systems, such as network, database management, or system backups concerns.

### Legal Framework

The following laws provide a legal framework for electronic records management in the Commonwealth of Virginia. Agencies and localities are mandated by these laws effectively and efficiently to preserve and maintain their public records in any format. This list is not comprehensive.

- [Virginia Public Records Act](#) (*Code of Virginia*, § 42.1-76–§ 42.1-91)
- [Virginia Uniform Electronic Transactions Act](#) (*Code of Virginia*, § 59.1-479–§ 59.1-498)
- [Copies of Originals as Evidence](#) (*Code of Virginia*, § 8.01-391)
- [Virginia Freedom of Information Act](#) (*Code of Virginia*, § 2.2-3700–§ 2.2-3714)
- [Government Data Collection and Dissemination Practices Act](#) (*Code of Virginia*, § 2.2-3800–§ 2.2-3809)
- [Virginia Civil Remedies and Procedure](#) (*Code of Virginia*, § 8.01)

### Purpose

The purpose of the following guidelines is to provide best practices for public bodies that are developing an electronic records management strategy. The guidelines extend the policies and practices of paper-based record-keeping to an electronic environment. Agencies and localities are responsible for implementing appropriate policies, procedures, and business practices in order to ensure that an electronic records management system protects the authenticity, reliability, integrity, and usability of public records. As such, the guidelines are designed to identify critical issues for public officials to consider when designing, selecting, implementing, operating, and maintaining an electronic records system.

## Introduction

According to the [Virginia Public Records Act](#) (VPRA) of the *Code of Virginia* §42.1-77, a public record is defined as:

recorded information that documents a transaction or activity by or with any public officer, agency, or employee of an agency. Regardless of physical form or characteristic, the recorded information is a public record if it is produced, collected, received, or retained in pursuance of law or in connection with the transaction of public business. The medium on which such information is recorded has no bearing on the determination of whether the recording is a public record.

Therefore, it is the content of a record, not its medium, which determines whether a record constitutes a public record. An electronic record is a record created, generated, sent, communicated, received, or stored by electronic means. Electronic record formats include, but are not limited to, word processing files, spreadsheets, e-mails, instant messages, Web sites, databases, and scanned images, as well as multimedia files that may include audio, graphics, video, and animation.

New information technologies have transformed the way information is created, used, disseminated, and stored. These new technologies enable us to collect information for and about citizens, document the business of government, and communicate, both within government agencies and between agencies and the public, in new and enhanced ways. Virginia state agencies and localities are responsible for ensuring that policies, practices, and systems for the management of electronic records are fully integrated into their records management programs. The following guidelines provide direction on the management of electronic records throughout their entire life cycle, from initial system design to final disposal or permanent preservation.

For additional Commonwealth information technology policies, standards and guidelines please see VITA's [Information Technology Resource Management \(ITRM\)](#) library. There are also several organizations that develop nationally and internationally recognized standards in the field of electronic records management. The International Organization for Standardization (ISO), for example, provides a number of standards that relate to the management of records, specifically [ISO 15489-1:2001](#) and [ISO 15489-2:2001](#). A complete list of known technology standards can be found at [NSSN: A National Resource for Global Standards](#).

## **ESSENTIAL CHARACTERISTICS OF ELECTRONIC RECORDS**

Like other government and commercial organizations, Virginia state agencies and localities face challenges in managing and preserving electronic records, as they are easily revised, deleted, changed, and manipulated. If appropriate measures are not taken, the essential characteristics of records can be altered or lost in the preservation process. Careful planning and system design are required to guarantee that the following characteristics of electronic records are both captured and maintained for the lifetime of the record.

The essential characteristics of electronic records are:

### **1. Content**

The content piece of a record is the information it conveys. Content can be composed of numbers, text, symbols, data, images or sound. The information content of a record should be an accurate reflection of a particular business transaction.

### **2. Context**

Contextual information is crucial to the evidentiary function of records. If a record lacks key information about its creator, the time of its creation, or its relationship to other records, its value as a record is severely diminished or lost entirely. In the case of paper records, much of the context can be found attached to a record's content. Electronic records pose additional challenges in this area. As a result, contextual information should always be collected, structured, and maintained with the record at the time of record creation. This involves identifying and labeling (or tagging) records and linking them to contextual information. In some cases this can be achieved by embedding key contextual information into the metadata or electronic records themselves.

Metadata is, quite simply, data about data. More specifically, it is data describing the context, content, and structure of records and their management through time. A library catalog, for example, contains metadata in the form of entries for title, author, and subject, which are data related to books and other library resources. Effective metadata relies on a structured format and controlled vocabulary that is commonly understood among its creators and users. Because digital records can only be accessed using hardware and software, the role of metadata in electronic records is vital.

A government agency might choose to use information in a variety of ways. Whether dealing with issues of confidentiality, evidence, access, distribution, preservation, or destruction, it will be essential to understand and rely on the metadata that describes information. Government bodies use metadata to comply with records management laws, to document and design information technology systems, to document decisions and provide accountability, and to share and locate information.

Most software applications automatically create metadata and associate it with files. One example of metadata creation is the header and routing information that automatically accompany an e-mail message. Another is the set of properties created with Microsoft Word documents—certain elements such as the title, author, and file size can be automatically created, but other elements can be customized and created manually. Normally, some combination of automatically and manually created information is best for precise and practical metadata.

When creating metadata, be aware of the intended audiences as well as the information resources audiences use, the questions they ask, and their level of expertise. Furthermore, to increase the value of both metadata and the information it describes, work with other creators, custodians, and users of information. By agreeing on metadata standards, tools, and practices in collaboration with others, a more beneficial information management program is created.

The Library of Virginia encourages agencies and localities to maintain metadata relating to the

- Organization that recorded or maintained the records
- Other organizations that are, or have been, associated with the records
- Purpose of the records in fulfilling agency or locality functions
- Date of record creation
- Time period to which the records relate
- Frequency with which the records are, or will be, used
- Value or significance of the records in relation to the functions of the organization
- Record-keeping system used in relation to the records
- Relationship (if any) between the records and other records or materials
- Existence of any law, agreement, practice, procedure, arrangement, or understanding affecting the records

While such contextual information is absolutely necessary for long-term retention of electronic records, it can also improve the quality of records in active use, support information sharing, and enhance evidential quality.

### **3. Structure**

Structure is defined as the appearance and arrangement of a record's content, including the relationships between fields, entities, language, style, fonts, page and paragraph breaks, links, and other editorial devices. Record-keeping systems must capture and preserve information about the structure of records either as part of the metadata associated with the records or in separate documentation. It is easier to preserve a record over time if it has a simple record structure. It is also advisable to base record structure on open standards to avoid dependence on a specific company or organisation. Two examples of open standard include Standard Generalized Markup Language (SGML) and eXtensible Markup Language (XML).

In order to maintain record integrity, agencies should follow information technology profession best practices for data preservation. Systems must ensure the following:

- A record creator's identity is verified
- Restrictions exist regarding permissions to read and write files
- Periodic system audits are conducted
- Data transmission includes data error checking and correction
- Data backup occurs regularly
- Data on off-line media are regularly refreshed to avoid loss of data due to degradation